

CLAIMS:

1. A method of restoring phase information on radiation transmitted through an object on the basis of detection data obtained by detecting intensity of the radiation transmitted
5 through the object, said method comprising the steps of:

(a) correcting blur amount for at least one of plural sets of detection data obtained by detecting intensity of radiation on plural detection planes at different distances from the object, said plural sets of detection data
10 representing radiation image information on the plural detection planes, respectively;

(b) obtaining differential data representing difference between first detection data and second detection data of said plural sets of detection data where the blur amount has
15 been corrected for at least one thereof;

(c) obtaining Laplacian of phase on the basis of said differential data and any one of said plural sets of detection data and the detection data in which the blur amount has been corrected; and

20 (d) obtaining phase data of the radiation by performing inverse Laplacian computation on the Laplacian of phase.

2. A method according to claim 1, wherein step (a) includes uniforming blur amounts caused by a focal size of a radiation source in said plural sets of detection data on the basis
25 of respective blur functions of said plural sets of detection data.

3. An apparatus for restoring phase information on

radiation transmitted through an object on the basis of detection data obtained by detecting intensity of the radiation transmitted through the object, said apparatus comprising:

5 blur correcting means for correcting blur amount for at least one of plural sets of detection data obtained by detecting intensity of radiation on plural detection planes at different distances from the object, said plural sets of detection data representing radiation image information on
10 the plural detection planes, respectively;

 difference processing means for obtaining differential data representing difference between first detection data and second detection data of said plural sets of detection data where the blur amount has been corrected for at least
15 one thereof;

 Laplacian processing means for obtaining Laplacian of phase on the basis of said differential data and any one of said plural sets of detection data and the detection data in which the blur amount has been corrected; and

20 inverse Laplacian processing means for obtaining phase data of the radiation by performing inverse Laplacian computation on the Laplacian of phase.

4. An apparatus according to claim 3, wherein said blur correcting means uniform blue amounts caused by a focal size
25 of a radiation source in said plural sets of detection data on the basis of respective blur functions of said plural sets of detection data.

5. A program for restoring phase information on radiation transmitted through an object on the basis of detection data obtained by detecting intensity of the radiation transmitted through the object, said program actuating a CPU to execute
5 the procedure of:

(a) correcting blur amount for at least one of plural sets of detection data obtained by detecting intensity of radiation on plural detection planes at different distances from the object, said plural sets of detection data
10 representing radiation image information on the plural detection planes, respectively;

(b) obtaining differential data representing difference between first detection data and second detection data of said plural sets of detection data where the blur amount has
15 been corrected for at least one thereof;

(c) obtaining Laplacian of phase on the basis of said differential data and any one of said plural sets of detection data and the detection data in which the blur amount has been corrected; and

20 (d) obtaining phase data of the radiation by performing inverse Laplacian computation on the Laplacian of phase.

6. A program according to claim 5, wherein procedure (a) includes uniforming blue amounts caused by a focal size of a radiation source in said plural sets of detection data on
25 the basis of respective blur functions of said plural sets of detection data.